

Before the
FEDERAL COMMUNICATIONS COMMISSION

Washington, DC 20554

In the matter of)	
Location-Based Routing)	PS Docket No. 18-64
Wireless 911 Calls)	

COMMENTS OF THE NATIONAL EMERGENCY NUMBER ASSOCIATION

The National Emergency Number Association (“NENA”)¹ hereby submits these comments in response to the Commission’s Notice of Inquiry (“Notice”)² in the above-captioned proceeding. NENA commends the Commission for its continuing efforts to work with industry and the 9-1-1 community in the area of location-based services and applauds the exploration of location-based routing—a process that has seen enormous opportunities for innovation since the Commission last amended its rules in 2001.³ NENA believes great promise lies in adapting current and emerging location-based services to the routing of 9-1-1 calls for stationary,

¹ NENA: The 9-1-1 Association improves 9-1-1 through research, standards development, training, education, outreach, and advocacy. Our vision is a public made safer and more secure through universally-available state-of-the-art 9-1-1 systems and trained 9-1-1 professionals. NENA is the only professional organization solely focused on 9-1-1 policy, technology, operations, and education issues.

² See LOCATION-BASED ROUTING FOR WIRELESS 911 CALLS, PS Docket No. 18-64, Notice of Inquiry (rel. Mar. 23, 2018).

³ See IMPLEMENTATION OF 911 ACT, Fifth Report and Order, Memorandum Opinion and Order on Reconsideration, 16 FCC Rcd 22264, 22265, para. 1 (2001).

nomadic, and mobile phones, but that proper testing and methodology are crucial for the reliable development and implementation of these technologies.

I. Wireless 9-1-1 calls are often misrouted, but the frequency of this phenomenon varies greatly between individual cell sectors

Mobile call routing mechanisms today still make use of legacy wireline architectures and processes. These processes are designed to route calls based on specific, fixed addresses, which mobile phones lack. Thus, current mobile call routing is based on the location of the centroid of the cell sector serving the phone at call time—not the location of the phone itself. This generally less accurate approach to routing becomes more of an issue when the cell sector extends across PSAPs’ jurisdictional boundaries. Scenarios where a call is routed to a pre-defined PSAP for a given cell-sector combination, and the receiving PSAP believes it should have gone to another PSAP are often characterized by PSAPs as a misroute.⁴ However, if the pre-assigned routing logic was followed, the case is not technically a misroute. Of course, the most desirable outcome is for the call to be routed to the PSAP associated with the caller’s exact physical location. In that regard, the current method of routing based on cell and sector inherently enables what is referred to as misrouting.

The Commission requests comment “on the current frequency of wireless 911 misrouting and its impact on public safety.”⁵ While comprehensive nationwide statistics on wireless misrouting do not exist, NENA believes the problem is serious enough to merit study and action

⁴ A poignant example of this type of misroute occurred in Cherokee County, Georgia in late 2014. A driver who had lost control of her SUV and driven it in to a pond phoned 9-1-1 from her mobile phone and was routed to the PSAP in neighboring Alpharetta county. Despite receiving clear and accurate—albeit colloquial—location information, the PSAP was unable to locate the caller because her location lie outside the boundaries of their mapping software. *See WOMAN DIES AFTER SUV SUNK INTO POND*, CBS 46, Feb. 6, 2015, *available at* <http://www.cbs46.com/story/27804302/woman-dies-after-suv-sunk-into-pond>.

⁵ Notice at ¶ 17.

by the Commission. As noted by the Texas 9-1-1 Entities in their survey of misroutes within their jurisdictions, while cell sectors generally experience very few misroutes, certain sectors can experience misroute rates higher than 50%.⁶ The price of these misroutes can be great: call transfers between PSAPs caused by misroutes require at least 15 seconds, but often require more than 90 seconds, depending on factors ranging from information about the call as well as training and coordination levels of the staffs and PSAPs involved.

Implementation of NG9-1-1 will lessen delays from misroutes as interconnected NG9-1-1 networks support automatic call transfer within the NG9-1-1 system service territory and among neighboring NG9-1-1 systems within their service territories. NG9-1-1—specifically NG9-1-1 based on the the *i3* standard—will allow seamless, native location-based routing on a technology-neutral and interoperable basis.

II. Proven interim solutions should be implemented, but not at the expense of negatively affecting other Location-Based Routing

The Commission requests recommendations regarding an “interim fix” method of location-based routing—a recommendation explored in the *CSRIC V LBR Report*. NENA believes call delivery delays should be minimized at all points in the call path, and while we appreciate the importance of continually-developed (including interim) call-routing solutions generally, we urge caution to ensure that such interim solutions do not incur delays in the development and implementation of longer-term and perhaps better routing solutions. This is not to say that NENA would oppose an interim method which produces measurably more accurate

⁶ See INITIAL COMMENTS OF THE TEXAS 9-1-1 ENTITIES, pp. 2–3, PS Docket No. 18-64, May 7, 2018.

and reliable call routing, but we advise the Commission proceed with the utmost caution in recommending stopgap solutions.

III. Registered and provisioned civic addresses hold promise, but are limited by user compliance and lack of action to

The Notice requests comment on the viability and effectiveness of provisioned or registered civic addresses.⁷ Location based routing using civic address can be successful, assuming addresses are accurate. Registered or provisioned addresses have proven to be problematic if provided by customers, because the large percentage of these that are nomadic VoIP are not kept updated by their users. Automatic location definition without customer action would be highly preferable to support effective 9-1-1 service. Further, wireless carriers do not currently support processes that can help 9-1-1 validate user addresses, or provide them for use by the NG9-1-1 systems for routing control.

IV. Routing speed can be increased by emerging technologies, but proprietary databases and lack of ubiquity threaten reliability

The Notice also seeks information on “how quickly 911 calls can potentially be routed when using device-based hybrid location solutions.”⁸ NENA notes that current trends—especially in the marketplace for third-party solutions—gravitate toward warm-start GPS processes. Assuming the data provided by these processes is properly handled and utilized, initial routing control could be accomplished within 2–3 seconds of call start for calls where the supplemental location data is determined to be dependable and adequate. However, the proprietary nature of these location services, the unknown nature of the databases that underpin

⁷ Notice at ¶ 22.

⁸ *Id.* at ¶ 25.

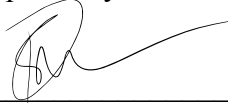
them, and their management and maintenance causes questions about how well those services can be safely applied.

The concepts noted in the NOI—including the NEAD—are all capable of improving call routing and timing, but not if they are applied only within the traditional routing processing timeframe of CMRS wireless 9-1-1 within the carrier networks. Many of the newer methods for location can provide data well within 5 seconds, but if it is not utilized in a timely way, little progress will be enabled.

V. Conclusion

NENA wishes to appreciate both the Commission's exploration of such an important topic and the opportunity to provide the above comments. Until the IP-native routing features of NG9-1-1 arrive, NENA supports the development and implementation of proven interim processes and technologies for location-based routing. However, NENA respectfully requests caution by the Commission that interim solutions neither cause harm to existing routing mechanisms or delay the implementation of NG9-1-1 native location-based routing.

Respectfully submitted,



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